Sonoita Creek State Natural Area Explorer's Journal

SONOITA CREEK
STATE NATURAL AREA
PATAGONIA, ARIZONA

Heritage Fund
parks, trails, education, preservation
Arizona State Parks™

Name _____

Date _____

Road Log (west)

While you are traveling from your school to Sonoita Creek and Patagonia Lake State Park, practice making ***observations*** from your bus window for each of the points of interest listed below!

	Point of Interest	Observation
1.	your school grounds	
2.	Santa Cruz River bridge	
3.	Little Red Schoolhouse	
4.	horse corrals	
5.	airport	
6.	tan water tank	
7.	Patagonia Lake park sign	
8.	Mt. Wrightson	
9.	Patagonia Lake	
10.	Patagonia Lake campground	

Do you know the name of this bird?
It is a:

_____

Road Log (east)

While you are traveling from your school to Sonoita Creek and Patagonia Lake State Park, practice making ***observations*** from your bus window for each of the points of interest listed below!

	Point of Interest	Observation
1.	your school grounds	
2.	Sonoita Creek Bridge	
3.	Cottonwood Forest	
4.	Steep red cliffs	
5.	Shrine	
6.	Circle Z Ranch	
7.	Santa Rita Mountains	
8.	Red Mountain	
9.	Mt. Wrightson	
10.	Patagonia Lake Campground	

Do you know the name of this bird?
It is a:

_____

Data Collected at
Sonoita Creek and Patagonia Lake State Park

Near Shore Habitat

Turbidity: _____JTU
Dissolved oxygen: _____ppm
Temperature of water _____ºC
pH: _____

Middle of Lake Habitat

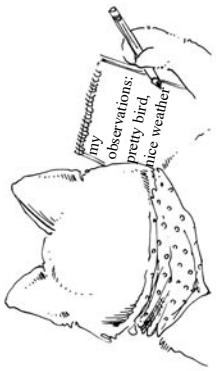
Turbidity: _____JTU
Dissolved oxygen: _____ppm
Temperature of water _____ºC
pH: _____

Tap Water

Turbidity: _____JTU
Dissolved oxygen: _____ppm
Temperature of water _____ºC
pH: _____

My Nature Observations

Sometimes it's nice to sit quietly and observe nature just because it's peaceful! Sit quietly and see, hear, smell and touch things around you! Draw a picture or write a poem or story about your observations.



Introduction

Welcome to Sonoita Creek and Patagonia Lake! This is a good place to explore nature. Today, you will use your 5 senses to learn about the world around you. What are your five senses?

While you are here, you are going to use the same equipment and tools that scientists use to learn more about the ***habitat***. What are the four parts of habitat?

1. _____ 2. _____

3. _____ 4. _____

Just like scientists, you will be doing tests to help answer a question. Scientists call this question a *hypothesis*. This is the *hypothesis* you will answer today:

Is the water at Patagonia Lake and Sonoita Creek healthy for the plants and animals who live here?

What do you think the answer might be? _____
Why? _____

Sonoita Creek and Patagonia Lake are *riparian areas*. Riparian areas are important habitats that include water. These areas are going away and need to be protected. Why should riparian areas be protected?

1. _____

2. _____

3. _____

4. _____

How to measure Dissolved Oxygen:

1. Use the small tube and put it completely under the water in the jar. Make sure it is full to the very top.
2. Drop 2 dissolved oxygen tablets into the tube. This will make some of the water spill out, but that is ok.
3. Screw on the lid. This may cause some water to spill out, too, but it is what is supposed to happen!
4. Mix by turning the tube upside down and right-side up several times until the tablets dissolve. This will take about 4 minutes.
5. Once the tablets have dissolved, have your timer tell you when 5 minutes more have passed.
6. After the 5 minutes, compare the color of the water sample to the Dissolved Oxygen chart. Record the results in your journal.

How to measure temperature:

1. Look at the thermometer attached to the inside of the contair.
2. The temperature is the number in green on the thermometer.
3. Write down the temperature in your journal.

How to measure pH:

1. Fill to the 10 ml line with water from the jar.
2. Put one pH test tablet inside.
3. Push the cap on and mix by turning the tube upside down and right-side up until the tablet is almost gone.
4. Some small bits may still be floating around, but that is ok.
5. Compare the color of the water in the test tube to the pH color chart.
6. Write the pH number from the closest color in your journal.

I can't talk right now, ladybug, I am testing my hypothesis!

The Physical Environment

How can you tell if the water in Patagonia Lake and Sonoita Creek is healthy for the plants and animals that call it home? One way to do that is to measure conditions in the water. The conditions we will be measuring today will be ***temperature, dissolved oxygen, pH***, and ***turbidity***. You should remember these from your classroom experiments before you came here today!

Each group will have a:

1. **recorder**-writes down all of the test results
2. **tester**- conducts the experiment with help from the rest of the group
3. **equipment handler-**is in charge of keeping testing equipment together and not letting anything get lost
4. **timer**-lets the tester know when the amount of time is up. Some experiments are timed to make sure they are done the same way each time.
5. **reader**-reads the instructions for the experiment to the group

Each member of the group will take turns with these jobs so that everyone gets a chance to do them.

Procedures:

How to collect a water sample:

1. put container completely underwater.
2. bring it out of the water and place the lid on or conduct tests.

How to measure Turbidity:

1. Show everyone in your group the black and white circle stuck in the bottom of your water jar. This is the **Secchi** Disk.
2. Hold the turbidity chart on the top edge of the jar
3. Look down through the water and decide which picture looks most like the Secchi Disk in the bottom of the jar
4. Write down the number from the chart in your journal

Pollution harms riparian habitats and the animals that live there. What are some examples of pollution?

1. _____

2. _____

3. _____

Everything in nature is connected. This is called the *web of life*. How do you think pollution in Patagonia Lake might affect the web of life?

_____

_____

You can help protect riparian areas like Sonoita Creek and Patagonia Lake by not polluting and by using less water. List three ways you can help protect riaprian areas.

1. _____

2. _____

3. _____

Don't you just love the fresh, cool water of a riparian area?

The Living Environment

To complete this part of your scientific investigations, you will be working in the microscope lab. Remember our question that we are trying to solve?

Is the water at Patagonia Lake and Sonoita Creek healthy for all the plants and animals who live here?

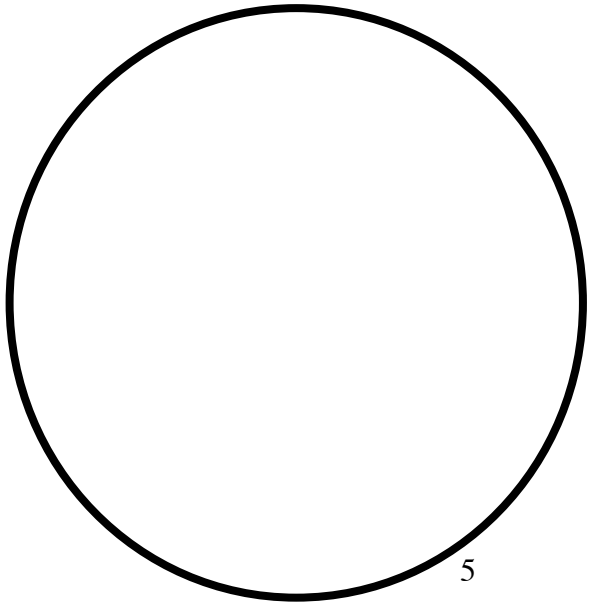
We will use the microscopes to have a look at some water samples and see for ourselves if anything is living in the water! Here's how to do it:

1. For this experiment, you will check to see what ***magnification*** you are using and record that number.
2. Look at the water samples that the teacher or ranger has put on the slide.
3. Draw any living things you find in the circles provided. You can use the posters to help you identify the creature you are seeing!

We have drawn you some extra circles in case you want to experiment with different magnifications!

This sample came from:

_____



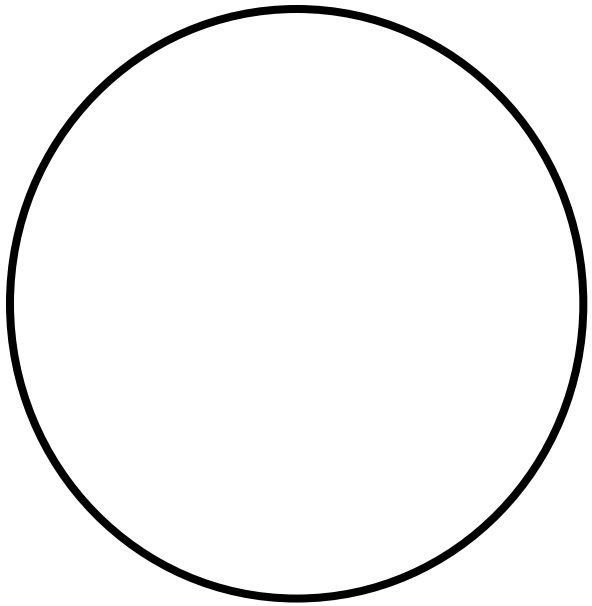
eyepiece _____X
objective _____X

My magnification is:
_____X

These are the names of the water creatures I saw:
_____

_____

_____



eyepiece _____X
objective _____X

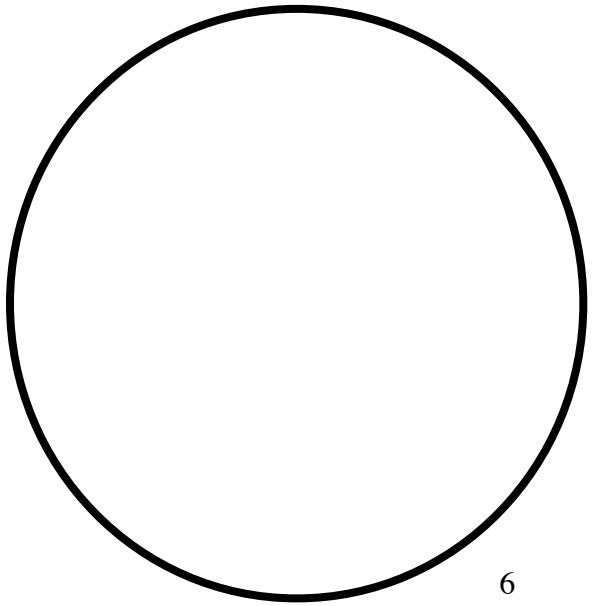
My magnification is:
_____X

These are the names of the water creatures I saw:
_____

_____

This sample came from:

_____



eyepiece _____X
objective _____X

My magnification is:
_____X

These are the names of the water creatures I saw:
_____

_____